

Notice of Allowability

Application No.

10/006,196

Applicant(s)

JEONG ET AL.

Examiner

Art Unit

Connie C. Yoha

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 9/03/03 and Terminal Disclaimer filed 10/03/03.
2. ☒ The allowed claim(s) is/are 1-29.
3. ☒ The drawings filed on 04 December 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No. _____.
- (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
- (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying Indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- 1 ☐ Notice of References Cited (PTO-892)
- 3 ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 5 ☐ Information Disclosure Statements (PTO-1449), Paper No. _____.
- 7 ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- 2 ☐ Notice of Informal Patent Application (PTO-152)
- 4 ☒ Interview Summary (PTO-413), Paper No. _____.
- 6 ☐ Examiner's Amendment/Comment
- 8 ☒ Examiner's Statement of Reasons for Allowance
- 9 ☐ Other

Connie C. Yoha
Technology 2800

DETAILED ACTION

Response to Arguments

1. Examiner took notice of the remarks and amendments made by applicant filed on 9/3/03.

Response to Amendment

2. This office action is in response to Amendment filed on 9/3/03.
Claim 1, 2, 6, 7, 17, 21, and 22 are amended.
Claims 26-29 are newly added.
3. Claims 1-29 is pending.
4. A terminal Disclaimer has been filed to obviate a Double Patenting rejection.
(See attached Interview Summary).

Allowable Subject Matter

5. Claims 1-29 is allowed.
6. Claims 1-29 are considered allowable since prior art made of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed limitations having device and method of programming a NAND string memory device by biasing the string select line to the first voltage and second voltage during the bit line setup period and to a third voltage between the first and second voltages during the string select line setup and program periods. Prior art also does not show the limitation of the third voltage being substantially twice a threshold voltage of NMOS transistor and that the third voltage is between a fourth and fifth voltages, wherein the fourth voltage is sufficient to turn on the first select transistor connected to the bit line corresponding to

the data bit to be programmed, and wherein the fifth voltage is a shut-off voltage of the first select transistor for the bit line corresponding to the data bit to be program inhibited, the shut-off voltage being determined by the first voltage $-(B \times V_{pgm})$, wherein B is a coupling ratio of the word line to the string select line and wherein V_{pgm} is the program voltage.

Conclusion

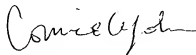
7. Any inquiry concerning this communication should be directed to Connie Yoha whose telephone number is (703) 306-5731. The examiner can normally be reached on Monday-Thursday from 8:00 A.M. to 5:30 PM.

8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms, can be reached on (703) 308-4910. The fax phone number for this Group is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-0956.



C.Yoha

October 2003



Connie C. Yoha

Technology 2800